Sub. Spec. Approved for Entry 11/14/06 BS

SUBSTITUTE SPECIFICATIO

DESCRIPTION

SURFACE ACOUSTIC WAVE FILTER AND DEVICE USING THE SAME

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a surface acoustic wave filter used in a communication device and a device using the filter.

2. Description of the Related Art

Fig. 15 shows conventional ladder type surface acoustic wave (SAW) filter 1001 disclosed in Japanese Patent Laid-Open Publication No.6-152317. Series resonators 23, 24, 25 and 26 are connected between input terminal 21 and output terminal 22 in series in this order from input terminal 21 to output terminal 22. One end of parallel resonator 27 is connected with a point between series resonators 23 and 24. One end of parallel resonator 28 is connected with a point between series resonators 25 and 26. Other end of parallel resonator 27 is connected with a ground via inductance element 29 providing an inductance. Other end of parallel resonator 28 is connected with a ground via inductance element 30 providing an inductance.

SAW filter 1001 has characteristics denoted by line 202 in Figs 2 and 3. As shown by line 202, SAW filter 1001 has attenuation bands at both sides of a pass band. The filter, such as SAW filter 1001, is required to have characteristics reducing a loss in the pass band and shifting sharply to the attenuation bands.

SUMMARY OF THE INVENTION